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INTRODUCTION

The Department of Community Affairs, Division of Codes and Standards, Element of Construction Code Enforcement, Bureau of Construction Project Review, has prepared this comprehensive plan review application guide to assist applicants in the plan review and release process. The guide gives step by step instructions to the plan submittal process, including definitions for the various types of construction projects, check lists for both complete plan filings and partial filings, calculation worksheets for fee schedules, addresses, and telephone numbers if there are any questions.

In 1975, the State Legislature enacted the New Jersey Uniform Construction Code Act which established the Department of Community Affairs as the primary building codes and standards agency in the State. The Act provided for a single, mandatory construction code and for a fundamental restructuring of the enforcement process. Hence, the New Jersey Uniform Construction Code (UCC), N.J.A.C. 5:23, et seq., was adopted and became effective January 1, 1977.

When Department Review and Release is Required

Municipalities are delegated the bulk of the responsibility for enforcing the UCC, including performing plan reviews, issuing permits, inspecting construction, and issuing certificates of occupancy. However, the Department is required to perform plan review in municipalities where the subcode officials and construction official do not possess code enforcement licenses of the appropriate class. The construction class of the particular municipality can be obtained through either the municipality's construction office, administrative offices, or by calling Regulatory Affairs at (609)530–8838.

In accordance with the UCC, submission to the Department for plan review must be made if the proposed project is:

- Class I A Departmental plan review and release is required prior to the issuance of a construction permit unless the construction official and each appropriate subcode official in the municipal enforcing agency is certified as a HHS construction official or subcode official;
- Class II A Departmental plan review and release is required prior to the issuance of a construction permit unless the construction official and each appropriate subcode official in the municipal enforcing agency is certified as a HHS or ICS construction official or subcode official;
- Class III....... A Departmental plan review shall not be required except when the Department acts as the enforcing agency. Application should be made to the local construction office, not the Department.

In addition to the above categories, all plans for the following structures must be submitted to the Department for review and release:

- Electrical generating stations and substations, including nuclear;
- Incineration plants;
- Solid waste disposal plants;
- Public mausoleums, vaults, crypts and other structures intended to hold or contain human remains;
- Health care facilities as defined in N.J.A.C. 5:23-1.4:
- Public school facilities as defined in N.J.A.C. 5:23-1.4;
- State-owned structures, unless delegated to other agencies by memoranda of understanding;
- Casino hotels: and
- All premanufactured systems for Class I and Class II structures, other than those authorized to be approved by an inplant inspection agency licensed to perform Class I and Class II plan review, and all on-site installation of Class I and Class II premanufactured construction within the jurisdiction of a local enforcing agency that is not a Class I or Class II agency.

Once a release—either partial or complete [see page 4]—is obtained from the Department's Bureau of Construction Project Review, the municipalities will issue the appropriate permit(s) and perform inspections so that construction may ensue.

The Uniform Construction Code

The New Jersey Uniform Construction Code (N.J.A.C. 5:23 et seq.) consists of a series of regulations that govern the construction process in the state. All aspects are covered, with subchapters on administration and enforcement; duties, powers and procedures of the various enforcing agencies; licensing of code enforcement officials; rehabilitation; barrier–free requirements; asbestos hazard abatement; radon hazard; and elevator safety. The UCC also adopts certain national model codes, called subcodes, to be an integral part of these regulations. Each subcode covers a specific technical area of construction activity. The subcodes and the sections that adopt them are as follows:

Subcode	National Model Code	UCC Reference
Building	International Building Code/2000New Jersey Edition	N.J.A.C. 5:23–3.14
Plumbing	National Standard Plumbing Code/2000	N.J.A.C. 5:23–3.15
Electrical	National Electrical Code/2002	N.J.A.C. 5:23–3.16
Fire protection	Portions of building, mechanical and electrical subcodes. See indicated UCC reference for specific information/sections	N.J.A.C. 5:23–3.17
Energy	CABO Model Energy Code/1995 (Residential) and ASHRAE 90.1-1999 (Commercial)	N.J.A.C. 5:23–3.18
Mechanical	International Mechanical Code/2000	N.J.A.C. 5:23–3.20
Fuel Gas	International Fuel Gas Code/2000	N.J.A.C. 5:23–3.22
One and two family dwelling	ICC One and Two Family Building Code/2000	N.J.A.C. 5:23–3.21
Rehabilitation	New Jersey Rehabilitation Subcode	N.J.A.C. 5:23-6
Barrier-free	New Jersey Barrier–Free Subcode (to include referenced standard ICC/ANSI A117.1/1998)	N.J.A.C. 5:23-7

In order to more fully understand the plan review process and what is required to secure a plan release, the applicant is referred to the New Jersey Uniform Construction Code. This "New Jersey Administrative Code," Title 5, Chapter 23, may be purchased from West Publishing Company, 610 Opperman Drive, PO Box 64526, St. Paul, MN 55164-0526. Telephone orders may be placed by calling the publisher at (612) 687-7000.

Copies of the referenced subcodes may be purchased from the following organizations:

Building Officials and Code Administrators International, Inc. (BOCA)

4051 W. Flossmoor Rd.

Country Club Hills, Ill. 60478-5795

(800) 214-4321

Referenced publications:

- International Building Code
- BOCA National Energy Conservation Code
- International Mechanical Code
- International One and Two Family Dwelling Code
- International Fuel Gas Code

The National Fire Protection Association (NFPA) Batterymarch Park Quincy, Mass. 02269 (617) 770-3000

Referenced publication:

• The National Electrical Code (NEC)

The National Association of Plumbing-Heating-Cooling Contractors P.O. Box 6808
Falls Church, VA 22046
(800) 533-7694

Referenced publication:

• The National Standard Plumbing Code (NSPC)

Council of American Building Officials 5203 Leesburg Pike, #708 Falls Church, VA 22041 (800) 214-4321

Referenced publication:

• ICC/ANSI A117.1-1998

American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc. (800) 527-4723

Referenced publication:

• ASHRAE 90.1-1999

GENERAL INFORMATION AND INSTRUCTIONS

The applicant must complete a project review application for each project submission. One copy is included with this guide; additional copies may be secured from the Bureau upon request. For detailed guidance in its preparation, refer to instructions later in this section.

When making application for plan review, the applicant must determine certain information. Most importantly, the applicant has to decide which type of review process to request—complete or partial plan release. Consider the following points when deciding:

Complete Plan Release

A complete plan release may be requested when all plans, specifications, and fees are presented to the Bureau at the time of original project submission. The advantage of this is that all individual elements of the project can be coordinated and cross-checked for code compliance, reducing the possibility of last minute plan changes to correct errors across the various subcodes. Release(s) and/or written notice of rejection(s) will be forwarded to the applicant within twenty (20) business days of submission of a complete application. The following items are to be provided for consideration as a complete plan release:

- 1. One (1) complete set of plans is required to accompany the original project submission. *Up to two additional sets will be required when the review is complete and ready for release.* Each set should include, as appropriate:
 - Footings and foundations
 - Underslab utilities
 - Structural framework
 - Exterior building
 - Interior building
 - Plumbing
 - Mechanical
 - Electrical
 - Fire protection
 - Elevators
 - Complete specifications, calculations, soil reports as required
 - Site plans
 - Letter of barrier-free accessibility costs, for renovation and alteration projects
- 2. All plans, specifications, calculations, barrier-free cost letters, soil reports and piling information must be signed and sealed by a New Jersey registered architect or a New Jersey licensed engineer.
- 3. The project review application must specify a complete release is desired, and must be submitted with a volume calculation worksheet [see page 9] and the Plan Review Fee Schedule.
- 4. Plans will not be assigned for review and the 20 day clock will not begin to run until this office is in receipt of the required plan review fee. Checks should be rounded off to the nearest dollar and made payable to "Treasurer, State of New Jersey."

Partial Plan Release

Requests for partial plan release are generally submitted when the entire project is not fully designed and it is necessary to begin construction due to considerations such as weather, finance, local requirements, etc. An advantage of this procedure is that additional work can be done to fine tune and complete plans not immediately required for construction. Disadvantages are that coordination of reviews is not possible and time may be lost in changing plans due to inconsistencies in submitted drawings. Each release request will be subject to either release or written notice of rejection within twenty (20) business days of assignment to the review team. In any case, no partial release will be issued until all fees have been paid. The submission procedure for partial releases is as follows:

- 1. One (1) set of plans, signed and sealed, must accompany the original partial release submission. Up to two additional sets will be required when the reviews are complete and release is ready. For typical required details, refer to the appropriate check lists beginning on page 13 in this guide.
- 2. The project review application must indicate a partial release filing is desired. The particular partial releases to be submitted should be checked, along with an anticipated submission date of those not

included in the current filing. The submission schedule is important to assist the Bureau in scheduling the project through the review team and avoid delays. Also, the Plan Review Fee Schedule form must be included.

- 3. Fees should be calculated to cover the type of work being done--either new buildings and additions or alterations and renovations. Fee payment must accompany the project application in order to avoid delaying the assignment of the project to the review team. Refer to page 11 for specific information in completing the Fee Schedule.
- 4. Please note that drawings submitted pursuant to a specific partial release should, to the greatest extent possible, contain only information related to that release. In any case, the Bureau's release stamp affixed to the drawings will indicate the applicable releases; permits or work on any other aspects of the drawing will not be authorized.
- 5. Specific requirements for each type of partial release are:
 - a. Footings and foundations release
 - Footing and foundation design drawings
 - Soil bearing analysis reports, signed and sealed; if pile foundation, provide test pile information, signed and sealed
 - Structural load calculations, signed and sealed, in compliance with the building subcode
 - It is strongly recommended that, in order to avoid complications further on in the review process, a full set of architectural plans preliminary or final be submitted at this time. The applicant will be advised by the Bureau of any changes that may be necessary for these architectural plans to conform to the code.
 - b. Underslab utilities release
 - Signed and sealed plans for underslab plumbing and electrical installation, as appropriate
 - c. Structural framework release
 - Structural framework plans, signed and sealed
 - Structural calculations, signed and sealed
 - d. Exterior building release
 - Architectural plans, signed and sealed, indicating site plan, sections, building elevations, other exterior details required to show code compliance as outlined in the attached check lists [see page 14]
 - e. Interior building release
 - Architectural plans, signed and sealed, indicating occupancy loads, floor plans with dimensions, all interior partitions and walls, including trim, finish, and door materials. Include details on means of egress, and other information indicated in the attached check lists [see page 14]
 - f. Plumbing release
 - Complete plumbing plans, signed and sealed
 - g. Mechanical release
 - Complete mechanical plans, signed and sealed
 - h. Electrical release
 - Complete electrical plans, signed and sealed
 - i. Fire protection release
 - Complete fire protection drawings, signed and sealed, that include system design and head locations; hydraulic calculations; water flow tests from an approved agency
 - Shop drawings are not required as long as sufficient details are provided to verify compliance with the Code

- i. Elevator release
 - Signed and sealed drawings refer to elevator check list on page 16 for specific items that must be included
 - Shop drawings are not required as long as sufficient details are provided to verify compliance with the Code
 - Completed Elevator Test and Inspection Fee Schedule [see page 12]
- 6. For construction of speculative buildings, all partial releases except interior building must be obtained. Tenant space fit-up work will be processed as a separate project, but it will be considered as an alteration to the speculative building. The tenant project number will be the same as the main building with the addition of an alphabetic suffix.
- 7. The holder of a partial release proceeds at his own risk, without assurance that a release for any other part or for the entire structure will be granted.
- 8. Final release is mandatory and can only be issued when all necessary drawings, fees, and other approvals have been secured and released.

Project Review Application

Once the type of review process has been decided, the applicant should proceed to complete the project review application. The following details are for specific areas on the project review application; refer to it as each item is detailed. **Note:** All of the shaded areas are for office use only. Do not enter any information in them

- 1. Section 1 Project identification
 - Enter project name as it should be identified in the plan review, release and permitting process.
 - Enter the street address of the project.
 - Enter municipality where project is located do not indicate mailing address.
 - Enter county where project is located.
 - Enter block/lot numbers as per the official municipality map.
- 2. Section 2 Project type and filing method
 - Check the project type box(es) that apply for new construction and/or addition, change of use, repair, renovation, alteration or reconstruction.
 - Check the filing type box for either a complete or partial review release, as desired by the
 applicant. Note that if a partial release filing is requested, Section 4 must be completed according
 to instructions below.
 - If filing for a variation, check the variation box under filing type and request a variation application form from the Bureau.
- 3. Section 3 Project specifications
 - Fill in all spaces as applicable to the project structure.
 - Enter Use Group, as defined in the building subcode [see page 8].
 - Enter area of largest floor.
 - Enter gross area of building.
 - Enter total building volume (refer to volume calculation worksheet on page 9 for computation methods).
 - Specify number of stories.
 - Indicate maximum height of building.
 - Show construction type, as defined in the building subcode.
 - Enter the total cost of the project including all partial releases, even if they are not yet submitted.
 - If the project is for renovations or alterations to an existing building, enter that portion of the total project cost that is dedicated to improving barrier-free accessibility. This amount is not required if the project is for a new structure, an addition, or repairs.

Note: All items in this section will be compared with information shown on submitted drawings any discrepancies will be noted and may require resubmission of project review application and fee schedule.

4. Section 4 - Partial releases requested

• If the indicated filing type in Section 2 is for partial plan releases, the appropriate boxes for all anticipated releases must be checked. Also, if the plans for these releases are not included at this time, the applicant should indicate when they will be available, to assist the Bureau in scheduling the project through the review team.

5. Section 5 - Applicant information

- The applicant must be the owner or the owner's designated agent.
- Owner Name: enter name, address, and phone number of the individual, organization or governmental agency that is the titled owner of the project. Check the box next to this item if copies of all correspondence are to be forwarded to the owner.
- Owner's Designated Agent Name: Check the box, enter name, address, and phone number of the individual not organization if any, who is acting in behalf of the project owner and will be receiving all project related correspondence from the Bureau. It is not necessary to supply this information if the box next to the agent's name is not checked. Note: please do not list the architect/engineer of record as the owner's designated agent.
- Architect/engineer: enter name, address, firm name and phone number of the design professional responsible for preparation of drawings and specifications.
- Comments and partial releases will be addressed to the architect or engineer, with copies to either the owner or the owner's designated agent as specified on the form.
- The owner or owner's designated agent must sign the completed application, in ink, in the lower right-hand corner box. All unsigned applications will be returned for signature, thereby delaying the plan review process.

Plan Review Submittals

Completed project review applications, plans, fee schedules and other appropriate forms are to be submitted to:

Via U. S. Mail:

New Jersey Department of Community Affairs Bureau of Construction Project Review Intake & Admissions

PO Box 817

Trenton, NJ 08625 - 0817

Other Delivery Service:

New Jersey Department of Community Affairs

Bureau of Construction Project Review

Intake & Admissions

101 South Broad St. 4th Floor

Trenton, NJ 08608

Further assistance in the completion and processing of the enclosed forms may be obtained by calling Intake and Admissions at (609) 633-7448. Office hours are 9:00 a.m. to 5:00 p.m. Monday through Friday except holidays.

Healthcare review applications are to be submitted to:

Via U. S. Mail:

New Jersey Department of Community Affairs Bureau of Construction Project Review

Health Care Review

PO Box 817

Trenton, NJ 08625 - 0817

Other Delivery Service:

New Jersey Department of Community Affairs

Bureau of Construction Project Review

Health Care Review

101 South Broad St. 4th Floor

Trenton, NJ 08608

For more information, phone: (609) 633-8151

Public school review applications are to be submitted to:

Via U. S. Mail:

New Jersey Department of Community Affairs Bureau of Construction Project Review

Education Review

PO Box 817

Trenton, NJ 08625 - 0817

Other Delivery Service:

New Jersey Department of Community Affairs Bureau of Construction Project Review

Education Review

101 South Broad St. 4th Floor

Trenton, NJ 08608

For more information, phone: (609) 633-0800

FEE CALCULATION INSTRUCTIONS

The following pages include the Plan Review Fee Schedule and the Volume Calculation Worksheet. The volume worksheet must accompany the Fee Schedule with your project review application for all new construction or additions. In case of both new construction plus renovations, a volume calculation worksheet for only the new construction must be submitted. The volume is used to complete Sections 1A and 2C of the Fee Schedule. Cost of reconstruction, alteration, renovation, and repair, if any, is used to complete Sections 1B and 2D of the Fee Schedule.

General Instructions

The following information is required on the Project Review Application, and Sections 1A and 2C of the Plan Review Fee Schedule:

Use Group (See building subcode, Chapter 3: Use and Occupancy Classification)

- a. B Business
 - E..... Educational
 - H High hazard
 - I-1 Institutional, residential
 - I-2 Institutional, incapacitated
 - I-3 Institutional, restrained
 - I-4 Day Care Facilities
 - M Mercantile
 - R-1 Residential, hotels
 - R-2 Residential, multi-family
 - R-3 Residential, 1 and 2 family over 3 stories
 - R-4 Residential, therapeutic
 - R-5 Residential, 1 and 2 family 3 stories or less
 - U Utility and miscellaneous
- b. A-1 Assembly, theaters
 - A-2 Assembly, nightclubs
 - A-3 Assembly, lecture halls, restaurants, churches, libraries
 - A-4 Assembly, arenas, skating rinks
 - A-5 Grandstands, bleachers, stadiums
 - F-1 Factory, moderate hazard
 - F-2..... Factory, low hazard
 - S-1..... Storage, moderate hazard
 - S-2..... Storage, low hazard
- c. Farm use buildings: Refer to N.J.A.C. 5:23 3.2(d) for specific information on applicability and requirements.

Plan Review Fee Schedule

Upon determining the use group and volume for new structures and/or total cost of renovation for existing ones, proceed to the Fee Schedule and enter all required information. Only those items pertaining to the particular project type need to be completed. Healthcare projects are separated on the Fee Schedule because their fees are different. If unsure as to whether a Healthcare review is required for all or a portion of the project, please contact the Bureau before completing the Schedule and remitting the fee. Please note that blank Fee Schedules may be duplicated and used for submissions of future projects, but the project review application must not be a duplicate.

Each section of the Fee Schedule contains instructions on how to complete it. If there is any question about fees, please request assistance when leaving plans for review, or call in advance [(609) 633-7448].

The enclosed Fee Schedule is not to be used to determine permit fees. Each municipality has a permit fee schedule established by local ordinance which will be used for this purpose. The municipality is required to credit the applicant an amount equal to 20 percent of their permit fee, since the plan review was performed by the Department rather than the local agency. If the project submitted for review is a State-owned facility, contact the State Buildings Unit for a State Buildings Permit Fee Schedule [609-633-6993].

VOLUME CALCULATION WORKSHEET

In accordance with N.J.A.C. 5:23 - 2.28, "volume computation," the volume of the structure shall be calculated as follows:

Height extending from basement or
ft.
ft.
sq. ft.
cu. ft.
c)) Height extending from one-fifth gs—not exceeding 2-1/2 feet below
ft.
ft.
sq. ft.
cu. ft.

Open sheds: (N.J.A.C. 5:23 - 2.28(d)) The volume shall be measured within the perimeter of the roof for a height from the grade line to the mean roof level.

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DEPARTMENT OF COMMUNITY AFFAIRS **Bureau of Construction Project Review**

November 5, 2003

PLAN REVIEW FEE SCHEDULE Project No. 1. Regular Plan Review Fee--Use Groups Other Than Healthcare I-1, I-2, I-4 and B: A. NEW CONSTRUCTION & ADDITIONS: Volume_____ cu. ft. X .010 = Use Groups A-1, A-2, A-3, A-4, A-5, F-1, F-2, S-1, S-2 of Bldg. Volume_____ cu. ft. X .016 = All Other Use Groups (Excluding Healthcare I-1, I-2, and B) of Bldg. B. RECONSTRUCTION, ALTERATION, RENOVATION, REPAIR--including site construction associated with pre-engineered systems of commercial farm buildings, premanufactured construction and external connections for premanufactured construction Renovation Cost: (All Disciplines) Estimated cost up to and \$10.00 per \$1,000 = including \$50,000.00 plus b. Portion of cost \$50,001.00 Additional fee of \$8.00 per \$1,000 =to and including \$100,000.00 plus Portion of cost above Additional fee of \$7.00 per \$1,000 =\$100,000.00 Subtotal Regular Plan Review FEE (Sum of above items A and B): 2. Healthcare Plan Review Fee--Use Groups Healthcare I-1, I-2, I-4 and B: C. NEW CONSTRUCTION & ADDITIONS: Volume cu. ft. X .022 = of Bldg. D. RECONSTRUCTION, ALTERATION, RENOVATION, REPAIR--including site construction associated with premanufactured construction and external connections for premanufactured construction Renovation Cost: (All Disciplines) a. Estimated cost up to and \$14.00 per \$1,000 = including \$50,000.00 plus b. Portion of cost \$50,001.00 Additional fee of 11.00 per 1,000 =to and including \$100,000.00 plus Portion of cost above Additional fee of \$9.00 per \$1,000 = \$100,000.00 Subtotal Healthcare Plan Review FEE (Sum of above items C and D): 3. PLAN REVIEW FEE (Sum of above items 1 and 2): 4. ELEVATOR PLAN REVIEW FEE: R-3 and R-4 Use Groups - \$50.00 per elevator Number of elevators: _____ All other Use Groups - \$260.00 per elevator Number of elevators: Total Elevator Plan Review Fee: 5. ELEVATOR UNIT TEST & INSPECTION FEES: Total Elevator Unit Test & Inspection Fees from fee schedule, enclosed: 6. GRAND TOTAL OF ALL FEES (Sum of lines 3 through 5): Remit check, rounded to nearest dollar, payable to "Treasurer, State of New Jersey" in this amount:

November 5, 2003

DEPARTMENT OF COMMUNITY AFFAIRS

BUREAUS OF CONSTRUCTION PROJECT REVIEW AND CODE SERVICES

ELEVATOR SAFETY UNIT - TEST AND INSPECTION FEE SCHEDULE (New Construction or Alterations Only)

A. Structures other than Use Groups R-3 and R-4, or exempted R-2:						
ELEVATOR TYPE	FEE EACH	No. of Devices	FEE			
Traction and winding drum elevators						
- 1 to 10 floors	\$243.00		\$			
- Over 10 floors	\$405.00		\$			
Hydraulic elevators	\$216.00		\$			
Roped hydraulic elevators	\$243.00		\$			
Escalators, moving walks	\$216.00		\$			
Dumbwaiters	\$54.00		\$			
Stairway chairlifts, inclined and vertice wheelchair and manlifts	eal \$54.00		\$			
Oil buffers	\$43.00		\$			
Counterweight governor and safeties	\$108.00		\$			
Auxiliary power generator	\$81.00		\$			
		SUBTOTAL PART A:	\$			
B. Structures in Use Groups R-3 and	d R-4 and exem	pted R-2:				
Test and inspection fee	\$162.00		\$			
		SUBTOTAL PART B:	\$			
C. Alterations:	\$54.00		\$			
		SUBTOTAL PART C:	\$			
	nject? No □					
E. Construction Permit Surcharge F	Fee: (Complete	Only if "No" is checked in	Item D, above)			
Cost of alteration (elevator subcode of	nly) \$	X \$0.96 per \$1,000.00	= \$			

Sum fees from Parts A, B, C, and E. Show total here and also on Plan Review Fee Schedule where "Total from Elevator Safety Unit Fee Schedule" is requested. Include this schedule with submission.

PLAN SUBMISSION CHECK LISTS

General Instructions

The following pages contain items grouped by release area that indicate the typical kinds of information to be submit ted on plans and specifications. Please understand that these check lists are intended to be only a guide, therefore they will not be accepted in lieu of actual plans and specifications. In no way should they be considered all-inclusive; nor should it be assumed that every project requires all of the items included below. The lists have been developed from our experience as to what we have found to be missing from submitted documents and are presented in an effort to simplify the submittal and review process. As a reminder, all plans, specifications, calculations, soil reports, piling information, etc., submitted for review must be signed and sealed by a New Jersey registered architect or licensed engineer [see page 4 for more information].

Footings and foundations

- 1. Enclose soil engineer's report for foundation investigation that provides recommendations for bearing capacity and includes certified test pit / boring location plans.
- 2. For pile foundations, enclose details for pile type, installed capacity, driving criteria, load test details for piles, as per the building subcode.
- 3. Enclose foundation plan, foundation sections, and specifications of materials to be used.
- 4. Enclose a site diagram, showing to scale the location of the new construction.
- 5. For basements or other retaining walls below grade, enclose structural calculations and details of wall thickness, reinforcement, etc.
- 6. For column foundations / wall foundations, enclose a chart showing load calculations per floor to top of column / wall footing or top of soil.

Underslab utilities

- 1. Provide details of plumbing and/or electrical installation within or beneath main foundation slab. Only those items directly involved with plumbing and/or electrical work beneath the slab need be shown.
- 2. For electrical installations, specify the following items:
 - Depth of cover from top surface of conductor, cable, conduit, or other raceway, to finished grade
 - Indicate grounding details as appropriate for slab installation
 - Specify underslab conductor sizes/types, and breaker sizes being supplied by them
- 3. For plumbing installations, provide the following:
 - Show all sanitary and storm drainage lines, indicating pipe size(s), slope, and materials used
 - Indicate point of discharge for storm drainage systems
 - Show details of underslab piping for domestic water and fire suppression systems, including pipe size(s) and materials

Structural framework

- 1. Enclose structural floor plans, roof plan showing sizes of members, and structural computations.
- 2. Enclose drawings showing connection details, and other technical data.
- 3. For trusses / floor joists, enclose drawings showing details of sizes, design criteria for live load / dead load, forces in member, specifications for lumber, sizes of lateral braces, sizes of purlins, their maximum spacings, and maximum deflection of members under working load.
- 4. For outer walls, provide calculations for horizontal wind load, justifying thickness of wall and size of reinforcement, if any.

5. Provide details for design criteria (live load / dead load, snow load, earthquake load, wind load) and specifications of material (steel, lumber, concrete, reinforcing steel bars, etc.), indicating allowable stress.

Exterior building

- 1. Provide setback distance of building from lot lines or other structures on same lot on all sides.
- 2. Provide the fire rating of exterior walls in hours; specify design/UL number (if rating is required).
- 3. Indicate accessible route of travel from parking lot to front door, and details of ramps with indicated slopes, for compliance with the barrier–free subcode.
- 4. Provide elevations, exterior wall/building sections, and details on all exterior doors and windows.

Interior building

- 1. If mixed use, indicate exact location, occupancy load, and square footage for these uses. Also show incidental uses, if appropriate.
- 2. If design is such that complete information cannot be shown on the project review application, indicate on plans all construction types, number of stories, and building heights.
- 3. Indicate door, window, and finish schedules on plans.
- 4. Provide thermal ratings of walls, ceilings, etc.
- 5. Provide the fire rating of corridor walls, floors, ceilings, exit stairways, shafts, columns, girders, beams, and roofs in hours; specify design/UL number (if rating is required).
- 6. For residential use, show STC ratings of partition walls and ceilings.
- 7. Show exit calculations; indicate the number of exits provided per floor, and specify the maximum travel distance in feet.
- 8. Indicate interior accessible routes of travel and details of ramps with indicated slopes, for compliance with the barrier–free subcode.
- 9. Provide details on location of telephones, water fountains, toilet rooms, laboratory and shop facilities, for compliance with the barrier–free subcode.
- 10. If a fire suppression system is required by the building subcode, verify that drawings comply with the fire protection subcode.

Plumbing

- 1. A site plan, showing plumbing lines into and out of the building to a distance five feet from the building line, must be submitted.
- 2. Include a sanitary drain and vent riser diagram, plan and elevation.
- 3. Include a fixture schedule listing each fixture, description, trap, vent sizes, DFU valve, SFU valves, hot and cold water connection sizes.
- 4. Include materials specifications, or reference on the drawings for piping materials.
- 5. Show storm water piping system, noting square foot area served by each roof drain, piping size and pitch. Plumbing plans must show storm water lines and pitch from building to approved discharge outfall, public storm sewer, or site drainage system.
- 6. Include a hot and cold water riser diagram, showing size and SFU counts.
- 7. Cleanouts must be indicated and labeled in all drainage lines.
- 8. Wall penetration sleeves should be indicated and details shown.
- 9. If a multi-story building, riser diagram for cold water must correspond in format and contain information shown in Appendix B of the plumbing subcode.
- 10. Plumbing fixtures and elevations / details shall conform to the barrier–free subcode specifically fixture heights, spacing, etc.

Mechanical

- 1. Show calculation for ventilation air requirement based on occupant load (refer to mechanical subcode).
- 2. Include Cop / EER value of HVAC units, boiler efficiency, etc. Supply the required energy calculations.
- 3. Include specifications on duct construction and installation, such as supports, loads, etc.
- 4. Include schematics and details of hazardous exhaust in units such as laboratory hoods.
- 5. Provide manufacturer's recommendation information for laundry / dryer exhaust.
- 6. Show locations of all fire dampers.
- 7. Include drawings for kitchen exhaust hood, duct and hood fire suppression system. Drawings must contain information required by the mechanical subcode and the fire protection subcode.
- 8. Include all details, specifications, and calculations (building, volume, air change, riser diagram) for smoke exhaust / control, stair pressurizations, etc., as applicable per building and fire protection subcodes.
- 9. Show details of all hydronic, gas, and fuel oil piping.
- 10. Include calculations for combustion air requirement.
- 11. Show all details of chimneys and vents.
- 12. Show machinery layout plan, equipment schedule, and details of the processes involved.
- 13. Show height of all mechanical controls, for compliance with the barrier-free subcode.

Electrical

- 1. Show details of all grounding, including:
 - Grounding electrode system;
 - Distribution grounding;
 - Transformer grounding if needed, show how neutral is established from transformer;
 - · All wire sizes.
- 2. Show all overcurrent protection indicate whether breakers are inverse, instantaneous, or non-adjustable.
- 3. Indicate the specific wiring method to be used in all the various areas.
- 4. Show circuitry of all emergency systems and emergency lighting, including fire pumps, elevators, and exit discharge.
- 5. Show details of all wiring and bonding for pools, spas, hot tubs, etc.
- 6. Indicate the type of conductors to be used, copper or aluminum, and their type of insulation and temperature rating.
- 7. Indicate all wire and conduit sizes.
- 8. If neutral is reduced, provide calculations.
- 9. Show all panel locations; indicate working clearances about all electrical equipment, switch boards and panel boards
- 10. Provide panel schedules and identify all circuits.
- 11. Provide riser diagrams.
- 12. Show circuitry, wire size, type of insulation and conduit size of fire signal systems.
- 13. Show height of all controls, for compliance with the barrier–free subcode.

Fire protection

- 1. For sprinkler and standpipe systems, specify system type, water supply information, and pipe sizes. Also indicate type of piping and fittings used throughout.
- 2. Provide hydraulic calculations for sprinklers; indicate hydraulic reference points.
- 3. Show measurements between branch lines and heads on lines, and indicate type of sprinkler heads used throughout the system.
- 4. Indicate height and location of all standpipe hose connections.
- 5. Provide a complete sprinkler system riser diagram with all parts identified.
- 6. For storage areas, provide hazardous material data sheets on commodities stored as appropriate, including

- quantity(s) stored.
- 7. Show installation details and location of fire department siamese connection to sprinkler/standpipe systems.
- 8. For all suppression and alarm systems, show location of control panel, control valves, detectors, pull stations, strobe lights, abort switches, fusible links, alarm bells, warning lights, signs, etc.
- 9. If fire pump is to be used, specify capacity and type. Indicate whether electric or diesel powered, and provide all details on diesel fuel supply. Provide details of all piping, fittings, control and relief valves, as well as test header details. Indicate method of temperature maintenance for pump and associated equipment.
- 10. For Halon / CO₂ systems, show location and type of detectors and nozzles. Show location and size of agent container and piping, as well as types of piping and fittings. Provide system calculations.
- 11. Show details and schematics on all electrical connections for all fire protection systems, including information on emergency power supplies.
- 12. For barrier–free accessibility, show height of pull stations.
- 13. Indicate all fire alarm area zones.
- 14. For dry chemical systems, indicate type of chemical being used. Show size and location of agent containers. Provide a copy of the installation manual for the system. Provide details on discharge alarms, pipe sizes, and types of materials.
- 15. For range hood systems, refer to Mechanical check list, Item no. 7.
- 16. Provide details on smoke control system as required in Mechanical check list, Item no. 8.

Elevator

- 1. The building subcode utilizes Standard A17.1 of the American Society of Mechanical Engineers(ASME) as its elevator referenced standard. All elevator related drawings must comply with this.
- 2. Specify elevator type (passenger, freight —specify class of loading, wheel chair manlift, private residence, other).
- 3. Show elevator capacity and loading.
- 4. Show size of buffer.
- 5. Indicate speed, travel length, number of landings.
- 6. Show cab details, dimensions, door operation, hand rail and control locations to comply with the above noted referenced standard and the barrier–free subcode.
- 7. Show type of drive, giving details of suspension.
- 8. Provide details of emergency operation firefighter's service.
- 9. Show all clearances and guide rail details.
- 10. Provide details of hoistway venting.
- 11. Provide pit details light, accessibility, etc.
- 12. Show equipment layout in the elevator machine room also show light and ventilation.

Barrier-free

The following table is a reference index of items included in the preceding check lists of those releases that are affected by the barrier–free subcode:

Partial release	Barrier-free item
Exterior building	3
Interior building	8 and 9
Plumbing	10
Mechanical	13
Electrical	13
Fire protection	12
Elevators	6